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United States Government Department o

memorandum

DATE: MAY 07 1992

REPLY TO ATTN OF: EM-453 (A. Rampertaap, 3-8191)

SUBJECT: Comments on Rocky Flats Environmental Restoration Phase I RCRA Facility Investigation/Remedial Investigation Draft Work Plan, Site-700 Area, Operable Unit 8

TO: Frazer Lockhart, RFO

The Office of Southwestern Area Programs, Rocky Flats/Albuquerque Production Division (EM-453), has reviewed the above-referenced document and is providing the attached comments. Please address the attached comments before the document is finalized. We have several important concerns with the document, as discussed below.

Ground water is the most probable pathway for contaminant migration, but determination of ground water flow characteristics and quality is not adequately addressed in this work plan. We suggest providing for ground water characterization for those individual hazardous substance sites where contamination above background levels is found. This could be a Phase II investigation based on the results of the Phase I investigation. Two drinking water sources, Standley Lake and the Great Western Reservoir lie downgradient of the plant site; therefore, ground water characterization should be a product of this investigation.

The level of detail and quality of the plan as currently written is lower than that needed for a National Priorities List (NPL) site ranked in Grou 1 (40 CFR 300, Appendix B). The specific investigation plan for each individual hazardous substance site (IHSS) is covered only by referencing Table 5 in the Inter-Agency Agreement (IAG). The IAG requirements should be the minimum work planned. Also, the work plan is of limited utility i the specifics of the plan for each IHSS must be found in other documents. Additionally, the NPL listing is not mentioned in this Work Plan.

The management strategies, organization, and responsibilities are not discussed in the Work Plan. This is an important part of a Resource Conservation and Recovery Act (RCRA) Facility Investigation/ Remedial Investigation (RFI/RI) work plan [see "Guidance on Conducting Remedial

12. Section 3, General: The discussion of applicable or relevant and appropriate requirements (ARARs) should be expanded to describe their applicability from the start of the RFI/RI through clean-up to provide proper perspective and comprehension.

SPECIFIC COMMENTS:

1. Section 1.1, p. 1-2, para. 3, last sentence: The need for any additional Phase II RFI/RI investigations will also be determined based on existing information and Phase I RFI/RI data.

2. Section 1.6.7.3, p. 1-20, Hydraulic Conductivities, para. 2: Text seems to be missing from the first sentence.

3. Figure 1.1: A scale should be provided.

4. Section 2.4.18, p. 2-34: The description of the event causing contamination is not consistent with the description in Section 2.5.18 for this site.

5. Section 2.4.28, pp. 2-41, and 2-42: It is not clear from the description whether this site is the current location of the americium-contaminated slab, the former location of the Filtration Recovery Ion Exchange System Tank and this slab, or both. Suggest clarifying the location in this text.

6. Section 2.4.31, p. 2-45: Since wash water was discharged to an unlined ditch southeast of Building 991, suggest considering inclusion of this ditch in IHSS 184.

7. Section 2.5.8, p. 2-62: Potential specific contaminants at this site should be listed.

8. Section 2.5.9, p. 2-64: The possibility of surficial ground contamination from cooling tower drift should be included.

9. Section 2.5.10, p. 2.65: The possibility of surficial ground contamination from cooling tower drift should be included.

10. Section 2.5.11, p. 2-66: The possibility of surficial ground contamination from cooling tower drift should be included.

11. Section 2.5.14, p. 2-71: Potential specific contaminants at this site should be listed.

12. Section 2.5.15, p. 2-74, para. 1: The potential constituents of "...all other constituents of process waste" should be identified in this section.

13. Section 2.5.17, p. 2-78: Suggest stating whether or not any potential pollutants exist at this site other than plutonium and americium.

14. Section 2.5.18, p. 2-83: The firefighting methods are not discussed. If water were used, contamination would be transported and spread by water run-off. If this were, in fact, the case, the transport and dispersion of contamination by this mechanism should be described.

15. Section 2.5.19, p. 2-85: The potential contaminants from the broken process waste line (para. 2) and the leaking aqueous process waste (para. 3) should be listed.

16. Section 2.5.26, p. 2-89: Suggest identifying the potential contaminants in the process waste.

17. Section 2.5.28, p. 2-94, para. 1: Suggest inserting the words "americium-contaminated" before the word "slab" in the first sentence to improve comprehension.

18. Table 3.1: Suggest adding total petroleum hydrocarbons, since this is needed for IHSS 151.

19. Section 4.2.2, p. 4-5, para. 1: Sampling of ground water should be included in the description regarding characterizing the ground water pathway.

20. Section 4.3.1.1, p. 4-15, last para.: Infiltration from incident precipitation and unlined ditches is a secondary release mechanism in the vadose zone.

21. Figure 4-4: If water was used to suppress the fires, then firewater runoff should be shown as a primary transport medium.

22. Section 10.2.2.5, p. 10-9, para. 3, and p. 10-10, paras. 2 and 3: Suggest defining the hazardous substance list (HSL) as that provided in Attachment 4 of the environmental restoration IAG to limit this list to those substances present at the Rocky Flats Site.

23. Section 10.2.2.5, p. 10-9, paras. 1 and 3: The discussion with respect to requiring Analytical Level V is inconsistent with Table 10.2.

24. Section 10.2.2.5, p. 10-10, para. 3: The statement that ground water will be sampled only at sites with positive soil gas survey results and from existing wells excludes those sites with radioactive or non-volatile organics contaminants. Soil gas surveys should be performed at only 3 of the 38 sites. It is also inconsistent with Table 10.3, which shows ground water sampling at three sites, none of which require a soil gas survey. Suggest revising this discussion to base ground water sampling on results of the Phase I investigation plus sampling of existing wells.

25. Section 10.2.3, p. 10-11: The reference to Table 4.3 should be Table 10.3.

26. Section 10.2.3, p. 10-11: The sampling schedule is shown in Sect. 8, not 4.3.

27. Section 10.3, pp. 10-11 and 10-12, paras. 3 and 4: Targets for precision and accuracy should be established based on Analytical Level and the analyses performed.

28. Table 10.2, p. 10-15: Field quality assurance samples for Analytical Level IV should include trip blanks for volatile organics samples, field blanks, and rinsate blanks.

29. Table 10.2, p. 10-15: The number of field duplicates for Analytical Level IV should be 10% of the samples taken.

30. Table 10.3 and 10.3a, General: IHSSs 184 and 188 should be presented in these tables.

31. Table 10.3, General: Planned installation of ground water monitoring wells should be included in this table. Table 5 of the IAG requires completion of certain boreholes to monitoring wells for IHSSs 125, 126.1, and 126.2. Suggest creating "Attachment b" to this table to provide this information.

32. Table 10.3, p. 10-18: HSL metals should be determined for IHSS 118.1 because ten metals were detected above background levels in a prior investigation (Sect. 2.5.1, p. 2-52).

33. Table 10.3, p. 10-18: Suggest including IHSS 172 since this leak containing plutonium could have spread to areas not repaved.

34. Table 10.3, p. 10-18: Suggest including IHSS 184 based on the description of this site provided in Sect. 2.5.31, pp. 2-99 to 2-100.

35. Table 10.3, p. 10-21: HSL metals should be determined for IHSS 118.1 since ten metals were found above background levels in a prior investigation (Sect. 2.5.1, p. 2-52).

36. Table 10.3, p. 10-21: Suggest determining HSL semi-volatiles for IHSS 123.1 because solvents and oils are possible contaminants (Sect. 2.5.3, p. 2-55).

37. Table 10.3, p. 10-21: Suggest determining HSL metals and HSL semi-volatiles for IHSSs 126.1 and 126.2 because various organic and inorganic constituents may be present (Sect. 2.5.6, p. 2-61).

38. Tables 10.3, p. 10-21: IHSS 138 is listed as one of the sites for borehole sampling, but the contaminants to be determined at this site are not identified.

39. Table 10.3, p. 10-21: IHSS 151 is listed as one of the sites for borehole sampling, but the contaminants to be determined at this site are not listed. Suggest determining total petroleum hydrocarbons, benzene, toluene, ethyl benzene, and xylene at this site.

40. Table 10.3, p. 10-24: Samples should be obtained at a depth greater than 6 in. because this site has experienced incident precipitation infiltration for 4 years and the spilled materials are highly water soluble. Therefore, they have probably migrated below a depth of 6 in.

41. Table 10.3, p. 10-24: The cooling tower areas, IHSSs 135, 137, and 138, should be included in the shallow soil sampling program to determine the level and areal extent of contamination from cooling tower drift.

42. Table 10.3, p. 10-24: The field method for obtaining shallow soil samples should be provided.

43. Table 10.3, p. 10-25: Based on the discussion in Sect. 2.5.2 on p. 2-55, IHSS 118.2 should be included for ground water sampling.

44. Table 10.3, p. 10-26: The field method should be provided.

45. Table 10.3, p. 10-27: The field method should be provided.

46. Table 10.3a, p. 10-28: Additional information should be provided to describe the purpose of the 6-ft composite samples.

47. Table 10.3a, p. 10-28: The numerical values of XX and X should be provided for IHSS 125.

48. Table 10.3a, p. 10-29: The numerical values of XX and X should be provided for IHSS 132.

49. Table 10.3a, p. 10-29: The numerical values of X should be provided for IHSSs 135, 137, and 138.

50. Table 10.3a, p. 10-29, IHSSs 139.1 and 139.2: Samples should be obtained at a depth greater than 6 in. because this site has experienced incident precipitation infiltration for 4 years and the spilled materials are highly water soluble. Therefore, they have probably migrated below a depth of 6 in.

51. Table 10.3a, p. 10-32: The numerical values of X should be provided for IHSS 159.

52. Section 11.4.1, p. 11-10, last para.: Suggest providing a specific description of how vadose water samples will be collected. The second sentence does not adequately describe this technique.

53. Section 11.4.5.1, p. 11-10, para. 1: Temperature should be measured

at 2 m and 10 m above land surface to get adequate data to calculate dispersion.

54. Section 11.4.5.2, p. 11-12, para. 2: Photoionization detection of volatile organics and measurement of percent of explosive limit should be included for borings at IHSSs 118.1, 118.2, and 151. Data derived from these measurements are needed for monitoring the safety of borings at these sites.

55. Section 11.5.1, p. 11-13: Suggest including site number and sampling location number in the sample number to aid in interpretation and verification of data.

56. Section 11.5.4, p. 11-15, General: The frequency of collecting quality assurance samples should be specified for each type of quality assurance field sample.

57. Section 11.5.6, p. 11-18, para. 1: Analysis for total organic carbon has not been included in the preceding sections. Total petroleum hydrocarbon determination would be more meaningful for IHSS 151 because it quantifies the amount of synthetic hydrocarbons. Total organic carbon is a measure of all hydrocarbons, both synthetic and naturally occurring.

58. Section 11.5.6, p. 11-18, para. 1: In the second sentence, soil samples need not be analyzed for anions, pH, and specific conductance. These are analytical parameters for water only.

59. Section 11.6, p. 11-19, para. 1: The current DOE Quality Assurance Order is 5700.6C, dated August 21, 1991. This order broadens Quality Assurance requirements beyond NQA-1 to meet the specific needs of the specific project. Suggest citing DOE Order 5700.6C and deleting the reference to NQA-1.

60. Section 11.6, p. 11-19, para. 2: The Quality Assurance Project Plan should be a part of the sampling and analysis plan. (See EPA 540/G-89/004, Sect. 2.3.2.)

61. Table 11.1, General: Plans for only 5 of the 38 sites are presented in this table.

62. Table 11.1, IHSS No. 118.1: Suggest showing the surface scrape sampling in the "Surface/ Shallow Soil" column to improve comprehension.

63. Table 11.3, Residue and Soils Sampling: The containers for volatile and semi-volatile organics should be a glass jar with a teflon-lined cap, not teflon-lined jars.

64. Table 11.3, Residue and Soils Sampling: Suggest removing the line between "TCL" and "semi-volatiles" to improve comprehension and to be consistent with the rest of this table.

65. Table 11.3, Residue and Soils Sampling: Anions, pH, and specific conductance are water attributes, not soils or residue parameters. Suggest removing these from this section of the table.

66. Table 11.3, Soil and Water Samples: Suggest substituting total petroleum hydrocarbons (TPH) for total organic carbon (TOC) because the TPH analysis specifically determines synthetic organic hydrocarbons, whereas TOC determines all organic carbon including that from natural sources.

67. Table 11.4, Trip Blanks: A trip blank should be included in each shipping cooler containing samples for analysis of volatile organics. Suggest including such a footnote because the frequency cannot be quantified as currently presented in this table.

68. Section 12.3, p. 12-3: The effects of radioactivity should be included in this section in addition to the toxic effects of chemicals.

69. Section 12.4, General: The effects of radioactivity should be included in this section in addition to the toxic effects of chemicals.

70. Section 12.5, General: The effects of radioactivity should be included in this section in addition to the toxic effects of chemicals.

71. Section 12.7, p. 12-8, para. 2: The current EPA target for carcinogenic materials is a risk of 1×10^{-6} or less. Suggest rewording the first sentence to reflect this.

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